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The Alaskan cable system

Washington

1925

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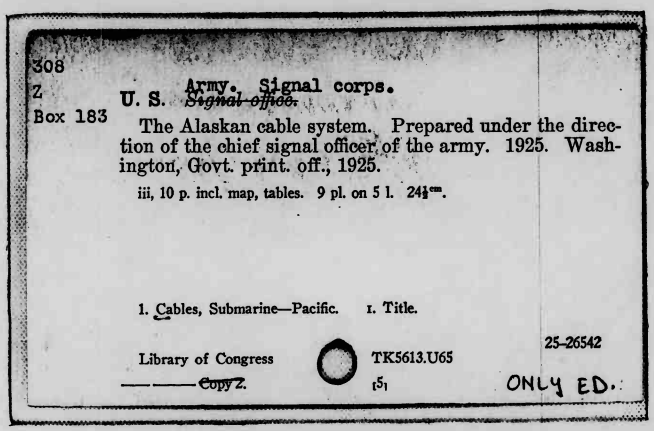

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THE
ALASKAN CABLE SYSTEM

308
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Box 113

PREPARED UNDER THE DIRECTION OF
THE CHIEF SIGNAL OFFICER
OF THE ARMY

▽

1925

THE
ALASKAN CABLE SYSTEM

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GOVERNMENT PRINTING OFFICE
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THE ALASKAN CABLE SYSTEM

HISTORY OF THE OLD CABLE

The completion of the Alaskan Cable System in 1904 marked one of the most noteworthy achievements of the Signal Corps of the Army and one which has accomplished much toward the settlement and development of the Territory of Alaska and for the contentment and well-being of its inhabitants. This cable was laid primarily to connect the telegraph systems of the United States with those of Alaska for the transmission of official messages in connection with the administration of military, judicial, and territorial affairs. Due to the great influx of people to Alaska after the discovery of gold at Cape Nome, the military Department of Alaska was created by the War Department in 1900 for the purpose of safeguarding life and property and directing and coordinating the making of surveys and explorations. In order to facilitate this work, Congress, in the act approved May 26, 1900, and in subsequent acts, provided for a comprehensive system of military telegraph and cable lines in Alaska. Under this act, the first cable was laid from Fort St. Michael, the military headquarters, to Safety Harbor, a distance of 133 miles, connecting by land line to Fort Davis at Nome, which was put into operation on October 17, 1900. The second cable was laid between Skagway and Juneau, the capital of Alaska, a distance of 123 miles. The cable was opened for business August 23, 1901, but was interrupted after working a few days. Every effort was made to restore communication, but, owing to the lateness of the season and the prevailing inclement weather, it was not until June 9, 1902, that the cable was placed in good working order. Aside from the military value of this cable, its commercial importance to southeastern Alaska is apparent from the fact that the combined Government and commercial tariffs during the 21 days of its operation exceeded $500.

As first planned, the Alaskan system simply brought the territorial military posts in communication with each other and with the commanding general of the Alaskan Department, then stationed at Fort St. Michael, but did not afford means of telegraphic communication outside the Territory of Alaska except over the Canadian

telegraph lines. To correct this situation, the Secretary of War, in his annual report for the fiscal year ended June 30, 1902, recommended the following:

> I wish to call especial attention to the importance of a cable between the northwestern coast of the State of Washington and the southern point of our Alaskan Territory, so as to connect the telegraph system of the United States with the telegraph system in Alaska. The Government of the United States is maintaining troops in Alaska at various points. It is responsible for the maintenance of order. Disturbances are always liable to occur in new mining camps and there is always a possibility of their occurring along a frontier line. Our only present means of communication by telegraph with our officers or with any one concerned in the Government of Alaska is over the Canadian land lines.

In accordance with this recommendation, Congress in 1903 appropriated $485,000 "for the purchase, installation, operation, and maintenance of a submarine cable for connecting the headquarters of the Department of the Columbia with military garrisons in southeastern Alaska, said cable to extend from a point at or near Fort Lawton, Seattle, Wash., via Sitka, Alaska, to Juneau, Alaska." Similarly, in 1904, Congress appropriated $321,580 "for completing the purchase, installation, operation, and maintenance of a submarine military cable from Sitka, Alaska, to Fort Liscum (Valdez), Alaska, connecting by an all-American route the headquarters of the Department of Columbia with the military garrisons in southeastern Alaska." The first section of the cable laid under the foregoing appropriation extended from Juneau to Sitka, a distance of 291 miles, which was completed on October 2, 1903. The cable from Sitka, Alaska, to Seattle, Wash., a distance of 1,070 miles, was completed on August 28, 1904, and the section from Sitka to Fort Liscum, a distance of 644 miles, was completed on October 3, 1904. In 1905 Congress appropriated $95,000 for the extension of the submarine cable from Valdez to Seward at the head of Resurrection Bay, the southern terminus of the Alaskan Central Railway. The work of laying this cable, 193 miles in length, was commenced on July 31, 1905, and was completed August 3, 1905.

Progress in the development of the industries and commerce of Alaska has been reflected in the traffic handled by the cable. The value of the traffic handled during the first year of operation amounted to $26,977.69, while that handled during the fiscal year 1924 amounted to $408,837.32.

HISTORY OF THE NEW CABLE

It became apparent early in 1921 that, in order to handle the large volume of traffic passing over the cable, it would be necessary to replace the original cable, which, on account of its age and general worn out condition, caused frequent interruptions to traffic and required numerous repairs. The cableship *Burnside*, which laid the

original cable, was likewise worn out, being 40 years old and having been in cable-laying service in the Philippine Islands as well as in Alaskan waters since 1900. As a preliminary step toward the replacement of the Alaskan cable, the Signal Corps secured, through Executive order of September 26, 1921, the United States Shipping Board steamship *Dellwood*, which the Signal Corps converted into a cableship, embodying the latest mechanical improvements in the cable-laying art.

The Signal Corps represented to Congress at its sessions the necessity for replacing the worn-out cables with a new and modern system that should meet the growing needs of Alaskan commerce. Traffic pertaining to commerce has for a long time held first place on the Alaskan cable, which had been originally laid for military purposes. These representations at last bore fruit and by the act approved March 2, 1923, Congress appropriated the sum of $750,000 for the replacement of the worn-out portions of the Alaskan cable, with a further provision authorizing the Secretary of War to incur obligations for an additional $750,000 to be made available in the 1925 appropriations.

PURCHASE OF THE NEW CABLE

The Signal Corps began immediately the work of preparation necessary for carrying out such a tremendous project. Its prevision to secure and have ready a modern cableship was to prove the keystone in this enterprise. Specifications were prepared by the Signal Corps engineering staff for purchasing the cable; studies made of the proposed location of the new cable and of the shore situation at Seattle, Sitka, and Valdez. In laying the original cable, the Signal Corps departed from the customary cable-engineering practice of using gutta-percha insulated cable and used rubber insulated cable of American manufacture. While rubber insulated cable does not have the life of the gutta-percha cable, the excellent results obtained by its use in the Alaskan cable, during long years of service, have demonstrated the practicability of such insulation in the event that gutta-percha cable is not obtainable. Deep-sea cable must be made on order, as factories do not keep a set-up for its production. The Signa Corps engineering staff found that the item of cost and other advantages favored gutta-percha insulated cable and accordingly decided on the use of this type of cable. Tenders were then requested from American and European cable manufacturers, and on August 1, 1923, when the bids were opened, it was found that only five cable manufacturers had submitted bids, four of them being British, no American manufacturer having submitted a bid. After investigation of the capacity of the various plants, reliability of the manufacturers, etc., a contract was entered into with one of the foremost British cable manufacturers on September 1, 1923, for 1,900 nautical miles of gutta-percha cable of various types and sizes.

LAYING OF THE NEW CABLE

In the meantime, a route from Seattle to Ketchikan, via Trocadero Portage, and from Ketchikan to Seward had been selected, and this route surveyed by the United States Navy destroyers *Hull* and *Corry*, which had been equipped with sonic depth finders. This route was determined upon because of more favorable conditions existing on the ocean bed and because more favorable cable landings could be secured, and, in addition, a large saving in cable mileage would be made. On January 24, 1924, the cableship *Dellwood* left Seattle, Wash., for London, England, to load the first section of the cable, which had been completed by the manufacturers. After an uneventful journey, the *Dellwood* returned to Seattle, Wash., and commenced cable laying operations on May 11, 1924. By May 30, 1924, the first section of the new cable, 868.65 nautical miles, was laid between Seattle, Wash., and Ketchikan, Alaska, and on June 18, 1924, the *Dellwood* once more left Seattle for London for the balance of the cable. The *Dellwood* returned to Seattle on September 21, 1924, and commenced laying the last section of the cable on September 27, 1924. The laying of the last section of the new cable, 738.054 nautical miles, between Ketchikan and Seward, was completed on October 9, 1924, the cableship having completed 42,000 miles of steaming in this undertaking.

CABLESHIP "DELLWOOD"

The successful transportation and laying of this new cable in such a short space of time by the cableship *Dellwood*, without hitch or flaw and in full keeping with predetermined engineering schedules, demonstrated that the United States now has in its possession and operation a cableship capable of transporting 1,800 miles of deep-sea cable and carrying on cable-laying operations in any ocean.

INFLUENCE OF THE CABLE ON ALASKAN AFFAIRS

As a result of the laying of this new cable, and in conjunction with the land telegraph lines and radio stations owned by the Government, and installed, operated, and maintained by the Signal Corps of the Army, Alaska enjoys communication facilities within its borders and with the outside world. Isolation, the bane of any newly settled country, no longer holds Alaska in its grip, and the hopes, ambitions, and achievements of its inhabitants are firmly bound to those of the people of the United States and to those of the rest of the world. Messages may be sent and received by cable, telegraph, or radio from the largest town or smallest settlement in Alaska to any point in the United States or Europe equipped with similar communication facilities. The news of the day is transmitted by cable, telegraph, or radio to inhabitants of towns and hamlets located long distances from the main traveled highways.

It is not difficult to realize that the cable has had an important share in the development of the Territory, both socially and commercially. Modern business is on such a basis that transactions can not be conducted and negotiations proceed between distant points without the service of electrical communications. Social necessities of the modern world are such that persons traveling to distant points are no longer content to lose contact with their connections at home or other points, and modern electrical communication systems have enabled such contact to be maintained. Hence, it is logical, and, in fact, necessary that the residents of Alaska should, and do, maintain considerable exchange of messages with friends in the home land. The cable system long realized this necessity and very early established a night letter system, which was one of the first cable systems offering such advantages to its users.

The Alaskan Cable System is available for commercial as well as governmental use, and handles day messages, night messages, night letters, and press matter on the same basis as telegraph companies throughout the United States. At the more important offices a telegraphic money transfer service is in operation. Weather forecasts and market reports are transmitted over the Alaskan Cable System and are posted on bulletin boards for the information of the public. In the smaller places where newspapers are not maintained, the Signal Corps telegraph office is the center of the educational, social, and political life of the community, as here the news of the world is received and posted on a bulletin board where it is read and discussed by the residents of the village.

FUTURE PACIFIC CABLE PROJECTS

The future will undoubtedly see the cable system involved in further extensions. There is at present but one cable across the Pacific Ocean from the United States to the Philippines, China, and Japan, and another cable from Canada to Australia. There are 17 cables across the Atlantic Ocean, and it is easy to foresee that the day is not far off when one or more additional cables will be laid across the Pacific Ocean. The present Alaskan Cable System may form a part of, or may be otherwise connected with such additional cables. The recent flight of the round-the-world flyers across the Pacific indicates that the shortest route over this vast expanse of water is by keeping close to Alaska and the Aleutian Islands. The Aleutians may be utilized for the location of relay stations should a new Pacific cable ever be laid along this route to the Philippines, China, and Japan.

CONNECTING SYSTEMS

At the present time the Signal Corps maintains and operates in the Alaskan Cable System 2,655 statute miles of submarine cable, 20 radio stations, and 840 circuit miles of telegraph lines, connecting 44 offices. This system connects with the Government railroad lines at Seward, Nenana, and Fairbanks, and with the White Pass and Yukon railroad lines at Skagway, and through the latter with the Canadian Government lines at White Horse, Yukon Territory. Also arrangements have been completed recently with the Canadian Government for the handling of radio traffic between the Signal Corps station at Circle, Alaska, and the Canadian Government station at Dawson City, Yukon Territory, Alaska. In addition, the Alaskan Cable System connects with nine privately owned commercial telephone companies in Alaska, all of which handle telegrams, and with the naval radio communication service, and through the latter with the radio stations operated by the various salmon canning interests.

CABLE *v.* RADIO

The question of the replacement of the submarine cables now in use on the Alaskan system by radio has been thoroughly studied by the Signal Corps in conjunction with the leading communication engineers, and it is the consensus of opinion that such replacement could not be advantageously made at the present stage of development of the radio art. Both the radio and cable have distinctive fields of service, and while radio may be used advantageously to supplement the cable service it can not entirely supplant it to-day. These two services are not destined to absorb each other, but, like the telephone and telegraph, each will find a full sphere of usefulness.

FINANCES

Inasmuch as the Alaskan Cable System is owned by the Government, Congress must appropriate for its upkeep, and for this purpose authorizes an expenditure of $140,000 each year. It should be understood that all money received for the transmission of telegrams on the system must be deposited in the Treasury of the United States and that no part of such receipts may be expended on the system except by congressional appropriation.

PERSONNEL

The military personnel employed in the maintenance and operation of the Alaskan Cable System, consisting of 4 commissioned officers, 3 warrant officers, and 203 noncommissioned and lesser grades, are paid from the Army appropriations, and their salaries form no charge against the upkeep of the cable system. In addition, 44 civilian employees form a part of the system, and their salaries are charged to the system.

TRAFFIC

The purpose of the Government in the past has been to keep a system of communication open which would answer its own needs and at the same time be a benefit to the people of the Territory. That the system has been of aid in the development of the Territory is shown by the annual message growth, as set forth in the following table:

Year	Number of messages (all classes)	Number of words, press matter	Value of commercial, this line and other line traffic	Value of Government traffic	Total
1903	----------	----------	[1] $14,243.54	$33,113.34	$47,356.88
1904	55,559	----------	29,748.74	45,777.02	75,525.76
1905	134,630	----------	104,139.01	71,349.28	175,488.29
1906	366,454	----------	195,143.34	104,807.93	299,951.27
1907	310,000	----------	236,912.39	135,746.38	372,658.77
1908	134,412	----------	229,825.85	144,641.12	374,466.97
1909	143,995	----------	222,888.40	188,782.68	411,671.08
1910	150,779	----------	207,083.91	174,005.00	381,088.91
1911	139,281	----------	208,726.95	152,214.75	360,941.70
1912	136,216	----------	206,548.32	182,641.94	389,190.26
1913	140,343	----------	217,499.84	180,677.23	398,177.07
1914	137,502	----------	217,351.35	161,370.00	378,721.35
1915	115,434	1,441,471	197,736.71	116,539.83	314,276.54
1916	131,413	1,410,946	188,982.68	194,571.01	383,553.69
1917	209,363	1,657,773	221,902.68	194,194.15	416,096.83
1918	258,547	2,367,150	228,072.47	313,302.63	541,375.10
1919	260,651	3,025,028	245,599.87	360,892.19	606,492.06
1920	219,996	2,875,656	239,495.03	231,933.02	471,428.05
1921	174,686	2,732,752	212,648.89	203,341.72	415,990.61
1922	214,068	2,629,100	241,160.06	141,708.84	382,868.90
1923	214,660	2,890,728	264,961.87	127,199.52	392,161.39
1924	223,031	2,595,215	273,315.69	135,521.63	408,837.32

[1] Includes receipts collected from opening of system.

CABLE, TELEGRAPH, AND RADIO STATIONS

The cable, telegraph, and radio stations maintained by this system are located at the followlng points:

Beaver Dam (telegraph).
Bethel (radio).
Chilkoot Barracks (telegraph).
Circle (radio).
Copper Center (telegraph).
Cordova (cable).
Craig (radio).
Donnely (telegraph).
Fairbanks (radio and telegraph).
Fort Egbert (radio).
Fort Gibbon (radio).
Fort Yukon (radio).
Fortuna Ledge (radio).
Grundler (telegraph).
Gulkana (telegraph).
Haggard (telegraph).
Holy Cross (radio).
Hot Springs (radio).
Iditarod (radio).
Juneau (cable and radio).
Ketchikan (cable and radio).
Kotzebue (radio).
Livengood (radio).
McCallum (telegraph).
Nenana (telegraph).
Nome (radio).
Nulato (radio).
Paxson (telegraph).
Petersburg (cable).
Richardson (telegraph).
Ruby (radio).
Salcha (telegraph).
Seattle (cable and telegraph).
Seward (cable and telegraph).
Sitka (cable and radio).
Skagway (telegraph and cable).
St. Michael (radio).
Tacotna (radio).
Teikhell (telegraph).
Tonsina (telegraph).
Valdez (cable, radio, and telegraph).
Wiseman (radio).
Wortmans (telegraph).
Wrangell (cable).

The towns of Seward, Ketchikan, Valdez, Juneau, Skagway, Nenana, Fairbanks, Sitka, and Petersburg are provided with messenger delivery service by the Signal Corps, such as may be found in cities and towns of similar size and importance in the United States.

TARIFFS

The charges for sending and receiving messages over the Alaskan system are moderate and compare favorably with the charges made for similar services in the United States.

The following table shows the cost of sending an ordinary 10-word day message from the principal towns in Alaska to some of the principal cities of the United States, via the Alaskan communication system and either of the large American telegraph companies:

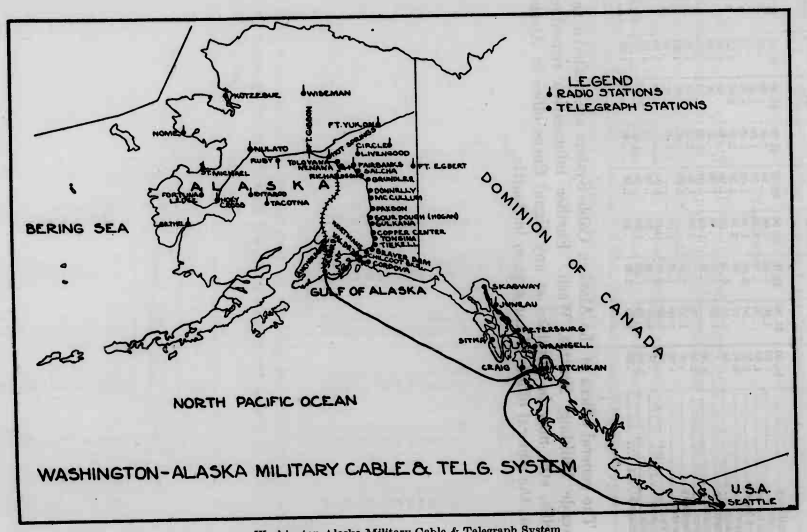
From—	To— Seattle	New York	Philadelphia	San Francisco	Washington, D. C.	New Orleans	Chicago
Anchorage	$2.00	$3.20	$3.20	$2.72	$3.20	$3.20	$2.90
Circle	2.00	3.20	3.20	2.72	3.20	3.20	2.90
Cordova	1.50	2.70	2.70	2.22	2.70	2.70	2.40
Fairbanks	2.00	3.20	3.20	2.72	3.20	3.20	2.90
Fort Yukon	2.00	3.20	3.20	2.72	3.20	3.20	2.90
Juneau	1.00	2.20	2.20	1.72	2.20	2.20	1.90
Ketchikan	1.00	2.20	2.20	1.72	2.20	2.20	1.90
Nenana	2.00	3.20	3.20	2.72	3.20	3.20	2.90
Nome	2.80	4.00	4.00	3.52	4.00	4.00	3.70
Petersburg	1.00	2.20	2.20	1.72	2.20	2.20	1.90
Seward	1.50	2.70	2.70	2.22	2.70	2.70	2.40
Sitka	1.00	2.20	2.20	1.72	2.20	2.20	1.90
Skagway	1.00	2.20	2.20	1.72	2.20	2.20	1.90
Valdez	1.50	2.70	2.70	2.22	2.70	2.70	2.40

The following tables show the cost of sending an ordinary 10-word day message from a few of the more important towns to other points in Alaska:

From—	To— Anchorage	Cordova	Fairbanks	Fort Yukon	Iditarod	Juneau
Anchorage	----------	$1.00	$1.00	$1.50	$1.70	$1.50
Cordova	$1.00	----------	.70	1.00	1.50	1.00
Fairbanks	1.00	.70	----------	.50	.70	1.50
Fort Yukon	1.50	1.00	.50	----------	1.00	1.50
Iditarod	1.70	1.50	.70	1.00	----------	2.50
Juneau	1.50	1.00	1.50	1.50	2.50	----------
Ketchikan	1.50	1.00	1.50	1.50	2.50	.50
Nenana	1.00	1.00	.20	.50	.70	1.50
Nome	1.70	1.50	.70	1.00	.50	2.50
Petersburg	1.50	1.00	1.50	1.50	2.50	.30
Seward	.50	.50	.70	1.00	1.50	1.00
Sitka	1.50	1.00	1.50	1.50	2.50	.40
Skagway	1.50	1.00	1.50	1.50	2.50	.30
Valdez	1.00	.50	.50	.70	1.20	1.00
Wrangell	1.50	1.00	1.50	1.50	2.50	.40

From—	To— Ketchikan	Nenana	Nome	Petersburg	Seward	Sitka	Skagway	Valdez	Wrangell
Anchorage	$1.50	$1.00	$1.70	$1.50	$0.50	$1.50	$1.50	$1.00	$1.50
Cordova	1.00	1.00	1.50	1.00	.50	1.00	1.00	.50	1.00
Fairbanks	1.50	.20	.70	1.50	.70	1.50	1.50	.50	1.50
Fort Yukon	1.50	.50	1.00	1.50	1.00	1.50	1.50	.70	1.50
Iditarod	2.50	.70	.50	2.50	1.50	2.50	2.50	1.20	2.50
Juneau	.50	1.50	2.50	.30	1.00	.40	.30	1.00	.40
Ketchikan	----------	1.50	2.50	.40	1.00	.50	.50	1.00	.30
Nenana	1.50	----------	.70	1.50	1.00	1.50	1.50	.70	1.50
Nome	2.50	.70	----------	2.50	1.50	2.50	2.50	1.20	2.50
Petersburg	.40	1.50	2.50	----------	1.00	.40	.40	1.00	.30
Seward	1.00	1.00	1.50	1.00	----------	1.00	1.00	.50	1.00
Sitka	.50	1.50	2.50	.40	1.00	----------	.50	1.00	.40
Skagway	.50	1.50	2.50	.40	1.00	.50	----------	1.00	.50
Valdez	1.00	.70	1.20	1.00	.50	1.00	1.00	----------	1.00
Wrangell	.30	1.50	2.50	.30	1.00	.40	.50	1.00	----------

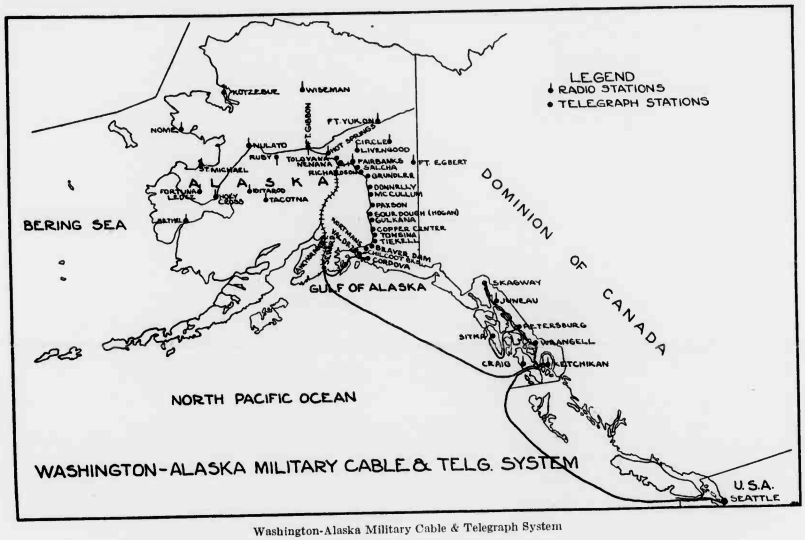
The general offices of the Alaskan Cable System are located in the Arcade Building, Seattle, Wash. Further information regarding tariffs, etc., may be obtained at any Signal Corps office in Alaska or at the general offices of the system in Seattle.



Washington-Alaska Military Cable & Telegraph System

MOUNT McKINLEY—20,300 FEET IN ELEVATION

The highest mountain in North America



Washington-Alaska Military Cable & Telegraph System

MOUNT McKINLEY—20,300 FEET IN ELEVATION

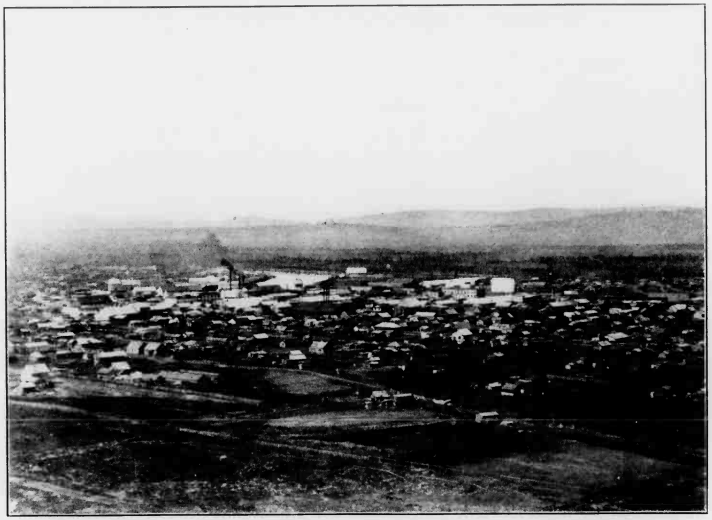
The highest mountain in North America

FAIRBANKS

A city in the center of Alaska

JUNEAU

The capital of Alaska

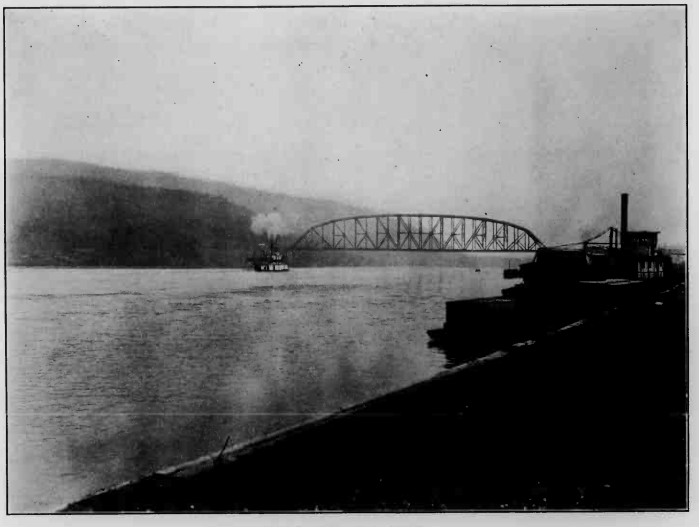


FAIRBANKS

A city in the center of Alaska

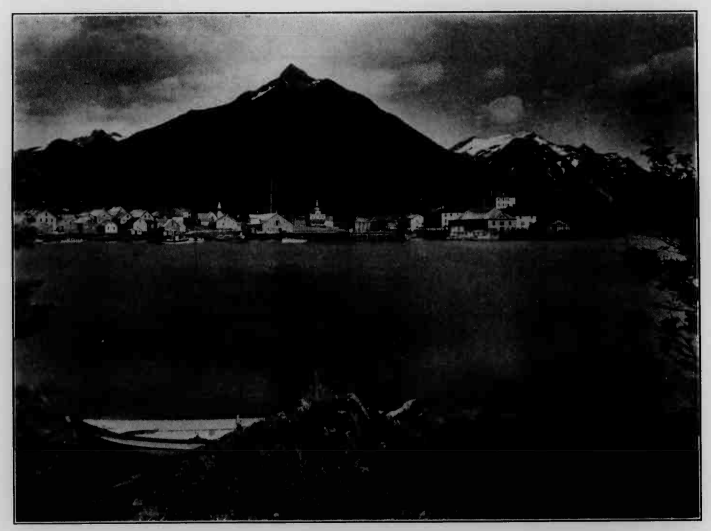
JUNEAU

The capital of Alaska



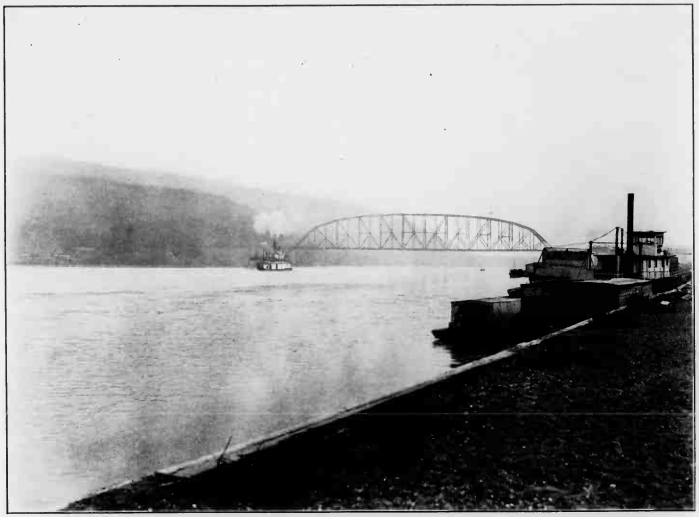
BIG RIVERS IN ALASKA

Railroad bridge 700 feet long. The Tanana at Nenana



SITKA

The first capital of Alaska



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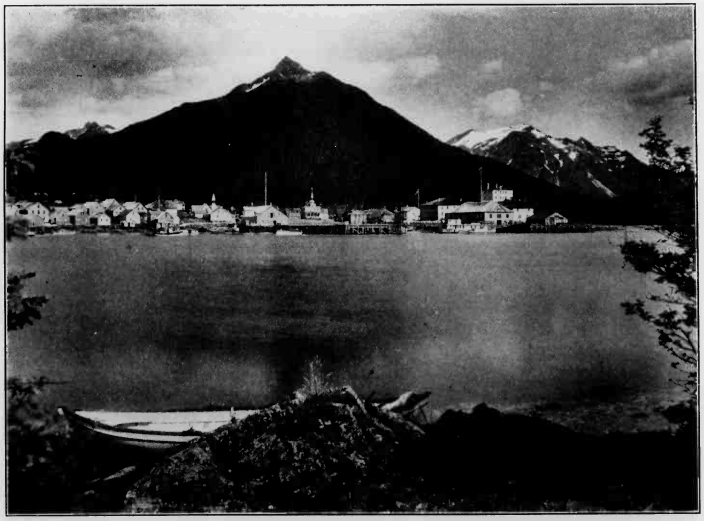

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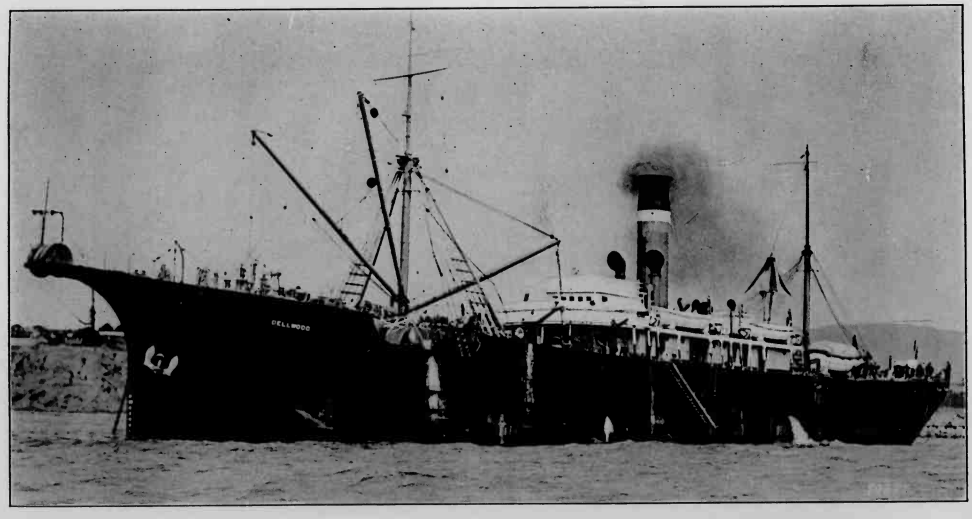
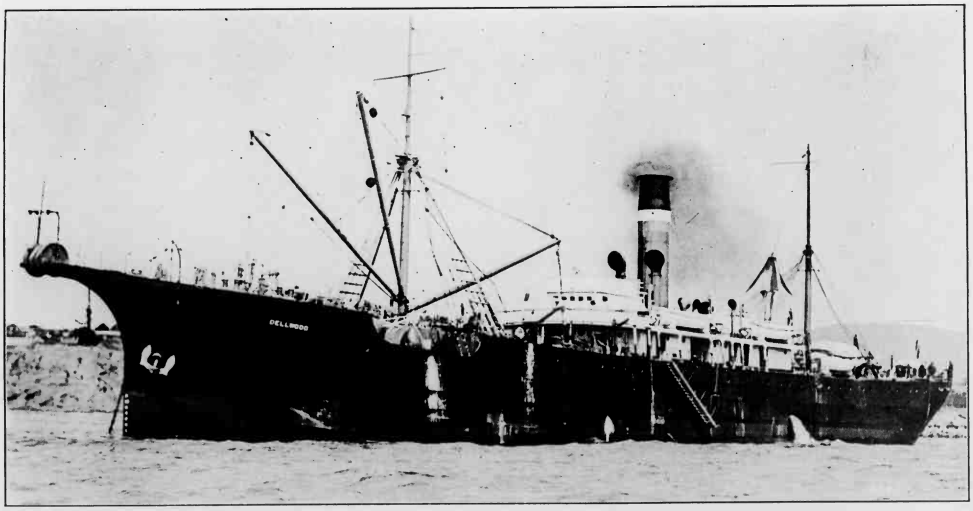
BROADWAY, SEWARD, ALASKA



DELLWOOD

U. S. Signal Corps cableship assigned to the Alaskan cable system

BROADWAY, SEWARD, ALASKA



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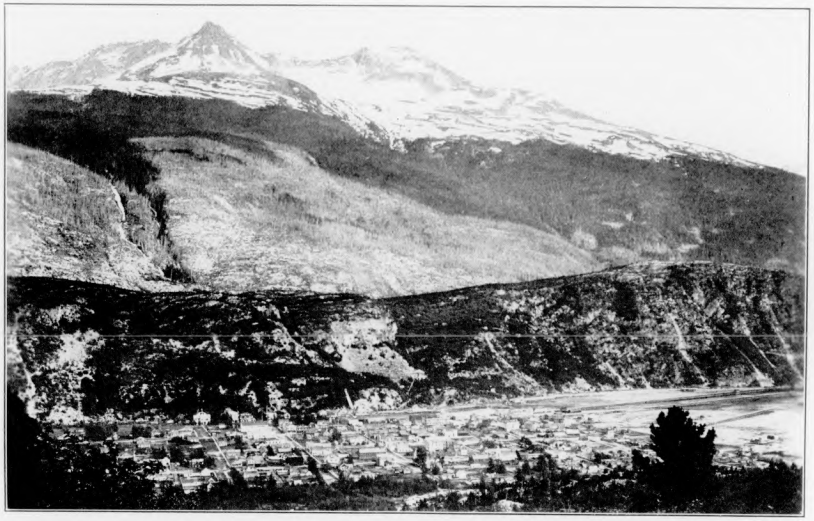
SKAGWAY

Where rail and water meet

SEATTLE, WASH.

The southern terminus of the Alaskan cable



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